hoodlike dilatation of the nostrils, much wrinkled and puckered, and subdivided by transverse constrictions at intervals of about three inches. It was found impossible to extend it into anything like a trunk, though it was quite soft and flexible when it arrived, having been sent home in salt. In fact, it closely resembles the "hood" of the Bladder-nosed Seal (*Cystophora cristata*), but is smaller in proportion to the size of the animal, and different in shape. Péron, who described it as a trunk, was so good an observer, and generally so trustworthy, that I can hardly believe that he invented the resemblance; indeed he called the animal "Phoque à trompe" in consequence of its possession of it. Might not the individuals that he described, which inhabited Bass's Straits, have belonged to a different species? The upper lip is about two inches high, above which the crest, or hood, rises four inches more, and is prolonged backwards over quite half the head, in the integuments of which it is gradually absorbed. The animal measures fourteen feet six inches in length from tip of nose to tip of tail, and sixteen feet three-and-a-half inches to the extremity of the hind flippers, taking the measurements along the curve of the back. The total length along the ground is fourteen feet one inch. The girth is eleven feet, measured just behind the hands. The vast bulk of the fore-part of the body; the diminutive hands, armed with long nails; the short, widely spreading feet; the thick, clumsy neck, andthe huge head crowned with its strange appendage, recall exactly the male animal depicted in the plate of "A Sea Lion and Lioness from Juan Fernandez" in Anson's voyage, over which it has been the fashion to make merry for the best part of a century; and vindicate the accuracy of that intrepid seaman. The skeleton was in process of maceration, with the exception of the head: this measured rather less than two feet in length. The sutures are all open, and the teeth unworn. It was impossible to examine the other bones with any accuracy, but the epiphyses appeared to be united. Besides the skin and skeleton of the full-grown male, there are the following:—

Young male, eight days old, skin stuffed, skeleton complete.
" older, skin without skeleton.
Female, full-grown, skin stuffed, skeleton complete.
" " skull and imperfect skeleton.
" " three skins.

The expedition has also brought home a male and female *Otaria* of singular beauty, quite new to science, for which Prof. Peters has proposed the name *Arctophoca gazella*, from the name of the vessel on board of which the voyage was made. There are also a skin and skeleton of the Leopard Seal (*Stenorhynchus leptonyx*), and many skeletons of Albatross, Penguin, Petrel, and Sheath-bill. Last, but not least, there is a skeleton of a *Delphinus* from the African coast, which will probably turn out to be either new, or one of those that have hitherto been known from skulls alone brought home by sailors.

While one cannot give too much praise to the skill and energy of the naturalist who has done so much in so short a time, and in so difficult a locality for work as the inhospitable shores of Kerguelen's Land, or to the University of Berlin for the instructions given before the expedition started, it is not in human nature to forget that the Germans are not the only nation who sent an expedition to that spot. Moreover, although these specimens could not be better placed than as part of the extensive collection now forming at Berlin, and, so long as Prof. Peters has charge of it, will be at all times accessible to all comers, yet Berlin is distant a journey of a day and a half from London, and in consequence the majority of Englishmen must remain as heretofore in ignorance of what a Sea Elephant is like. Why will our countrymen obstinately refuse to take the trifling amount of trouble necessary for the killing, the preparation, and the packing of this and allied marine mammals? Again, why, when an expedition is about to start, do not those in authority give stringent orders for the capture of the mammals that are known to exist in a given locality? Even from a commercial point of view the acquisition of these animals might be advantageously undertaken; as a brisk competition would ensue among all the museums for their possession, if perfect skeletons, in good condition, were to be brought home.

Vienna, Aug. 21 JOHN WILLIS CLARK

P.S.—As a rule, when "Sea Lion" is spoken of in the old voyages to the Pacific and South Atlantic, what we term Sea-Elephant is meant—a true Seal; while our Sea Lion—an *Otaria*—is spoken of as a "Seal."

OUR ASTRONOMICAL COLUMN

VARIABLE STAR (?).—Mr. J. E. Gore, of Umballa, Punjâb, suspects variability in a star "about 2° preceding the 5 m. σ Andromedæ, which Harding shows a 5 m. star, and which is not in Lalande," and he gives as the approximate place for beginning of the present year, R.A. 0h. 2m., and N.P.D. 53° 59′. On looking up the history of this star there will, however, hardly appear sufficient proof of any change of magnitude. Though it does not occur in the reduced Catalogue of Lalande, the star was, nevertheless, observed by him, and the place for 1790 will be found in "Connaissance des Temps," An. vii. p. 423, where the star is called 6 m., and being one of the large numbers of stars the positions of which were communicated by Lalande to Bode, in manuscript, it appears in the catalogue to his large atlas, and is there called E Andromedæ, but a 5 m., with Lalande as authority. Bessel (Zone 386) estimated it 7; it is 6·2 in the "Durchmusterung," and 6·7 in Heis.

THE SOLAR ECLIPSE OF SEPTEMBER 28-29.—This eclipse, which will be visible as a small one in these islands, is annular on the central line, but the track of annular phase upon the earth's surface is such that it appears only one of the established Observatories will be included within it, viz., that of Harvard College, Cambridge, U.S., and here the sun will be little elevated above the horizon. The *Nautical Almanac* contains the times of beginning, greatest phase, and ending, for Greenwich, Cambridge, Oxford, Liverpool, Edinburgh, and Dublin, and from these data the times for any place in England may be readily interpolated on the simple method proposed by Mr. Woolhouse in the "Companion to the Almanac" for 1871; or, for fifty or sixty miles round London the time of first contact, of which alone an observer needs any warning, will be obtained with precision (effect of tabular errors of course excepted) by the following formulæ:—

$$\text{Cos. } w = +\ 0\cdot14193 - [0\cdot13402]\ \sin. l + [0\cdot06273]\ \cos. l,\ \cos.(L + 86^\circ\ 18'\cdot2)$$
$$t = 1\text{h. } 33\text{m. os.} - [3\cdot71112]\ \sin. w - [3\cdot77334]\ \sin. l$$
$$- [3\cdot84549]\ \cos. l,\ \cos.(L + 82^\circ\ 41'\cdot5)$$

Here l is the geocentric latitude of the place, L its longitude from Greenwich, + if E., − if W., and t the Greenwich time of first contact; the quantities within square brackets are logarithms.

At Gibraltar, where the eclipse will be about as large as at any point in Europe, it begins at 10h. 35m. A.M. on the 29th, local mean time, and at the time of greatest phase, 11h. 53m., the magnitude of the eclipse is 0·43 (the sun's diameter = 1); the first contact at 79° from the sun's north point towards the west. At Malta there is a small eclipse (0·10), the middle at 1h. 49m. local time.

At the Observatory of Harvard College the annular phase begins at 6h. 21m. 10s. A.M. mean time at Harvard, and continues 3m. 12s., the sun's apparent altitude between 5° and 6°; the eclipse begins about half an hour before sunrise. At New York (Mr. Rutherford's Observatory) the greatest phase, 0·91, occurs at 6h. 10m. A.M. twenty-five minutes after sunrise, the eclipse ending at 7h. 25m. At Halifax, Nova Scotia, the greatest phase, 0·90, is at 6h. 56m., with the sun at an altitude of 11°, and the end of the eclipse at 8h. 5m.

The next annular eclipse of the sun will take place, 1876, March 25, in British Columbia and the Hudson Bay Territory; and the next solar eclipse visible in this country is that of 1880, December 31.

THE MINOR PLANETS.—Eurydice, which has been selected by Prof. Galle as affording at the approaching opposition another opportunity of obtaining an independent value of the amount of solar parallax, will be found very close upon the position assigned in the ephemeris published in the "Berliner Astronomisches Jahrbuch" for 1877; on August 29 the planet was as bright as stars of the tenth magnitude. Fortuna, at the present

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time, is fully a ninth magnitude, and will be found even with the Berlin chart for Hour 23 of R.A., which is by no means one of the most complete of the series. Metis is another member of this group of planets, at present easily recognised.

D'ARREST'S COMET. — M. Leveau is continuing his researches on the motion of this interesting comet, and has obtained elements which represent with considerable precision the observations in 1851, 1857–58, and 1870; allowance being made for the difficulty of fixing the place of so faint and diffused an object, and for the magnitude of the perturbations due to the action of the planet Jupiter; these perturbations are found to have changed the R.A. of the comet on September 24, 1870, by $-14^{\circ}\cdot6$, and the declination by $+7^{\circ}\cdot6$. M. Leveau has employed Bessel's mass for Jupiter, and concludes that it is susceptible only of very small correction. He promises, in a future communication to the Paris Academy of Sciences, to furnish an ephemeris for the next return of the comet to perihelion in the spring of 1877.

ON THE OCCURRENCE IN NEW JERSEY OF SUPPOSED FLINT SCALPING-KNIVES

IN glancing over a considerable series of American stone implements, we quite naturally expect to find that ever-present feature of the modern Indian's outfit, the scalping-knife. In every collection we recognise the stone axe that preceded the iron tomahawk; the jasper arrow and spear heads, now replaced by metallic ones; while neatly edged flints of various shapes give us cutting implements adapted to all ordinary uses; but not so with the scalping-knife. However large the series, we cannot, at a glance, point out a form of knife peculiarly well adapted for such a purpose, from the several shapes before us. While all are *possible* scalping-knives, none *probably* are so. This, at least, has been my experience until very lately, although I have constantly sought out "probable scalping-knives" from thousands of implements gathered and being gathered in this neighbourhood. Among the hundreds of specimens of flint knives there occurred none that resembled the modern knife, and I supposed that the stone scalpers were similar—the later being modelled from earlier form.

Whether the above inference is correct or not, I have at last detected some specimens that more nearly approach the "ideal form," one such being the flint implement here figured. The result of my collecting labours during the past summer amounts to about five hundred specimens not including fragments, and it is among these that I found the cutting implement above mentioned, with several others like it, both perfect and fragmentary. As the illustration shows, better than any description can do, this slightly curved knife seems moderately well adapted for scalping, as described by Loskiel.* He says: "They place their foot on the neck of the victim, seizing the hair with the left hand, and twisting it very tight together, in order to separate the skin from the head; then they cut it all round with a sharp knife, and tear it off." The specimen is a neatly chipped and evenly outlined jasper "implement," having the edges still well defined and sharp. The curved, and I presume cutting edge, is formed by striking off comparatively large flakes, and is better adapted to making a "clean" cut, than the straighter side. The lower end, about one-fourth of the whole length, is somewhat narrower, and while less sharp along its edges, is thinner, and has no median ridge. This portion, very possibly, was inserted into a bone handle as modern Eskimo scrapers now are (vide "Reliquiæ Aquitan." Part ii. p. 14); and if so, we surely have, in the figured implement, one that would conveniently serve as a scalping-knife. In the interest of archæology I should like to experiment with this specimen, but have no available scalp at hand; my own, unfortunately, being quite innocent of hair.

* Mission among North American Indians. London, 1794; P. 149.

There being no mineral found near here that gives off long thin flakes like true flint or Mexican obsidian, which latter was used for razors by the Mexican Indians, and the shells of our Delaware River unios being too thin and small to serve such a purpose, we must fall back on the jasper and quartz pebbles of the neighbourhood for the material for such knives.

The number of scalping-knives in use at all times must have been considerable, and this fact alone seems counter to my suggestion that the specimen figured may be a scalping-knife, inasmuch as so very few knives of this pattern have been found here. It must be remembered, however, that every warrior would have his knife buried with him, if not killed in battle, when the knife would be lost or stolen; and one such knife would last a lifetime, so that here may be an explanation of their comparative

rarity, the great mass of them still lying in the nearly obliterated graves. Or, like smoking pipes, they may have been handed down from one generation to another, their peculiar use rendering them sacred in the eyes of the savage; and when buried with the other "personal effects" of the dead warrior, like the buried pipes, they may have been exhumed by those too lazy to make or too poor to purchase for themselves. That graves were thus robbed is certainly true.

In the graves that I have been fortunate enough to examine I have found cutting implements of jasper, quartz, and slate; and, twice, jasper specimens like the above. These graves to which I refer are now only to be detected by the presence of such imperishable relics as stone implements, pottery, and by the discoloration of the soil. Judging from appearances, the body was placed at full length *on the surface of the ground*, the weapons placed with it being grouped together on the right side, and a vase of rude pottery filled with a red powder at the

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